

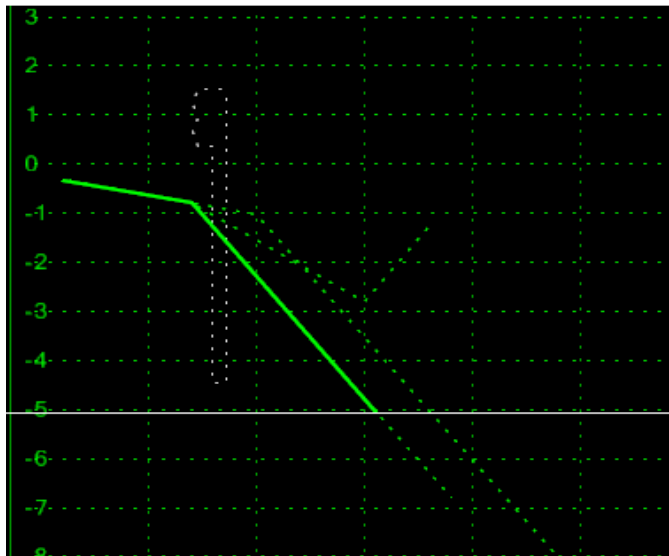
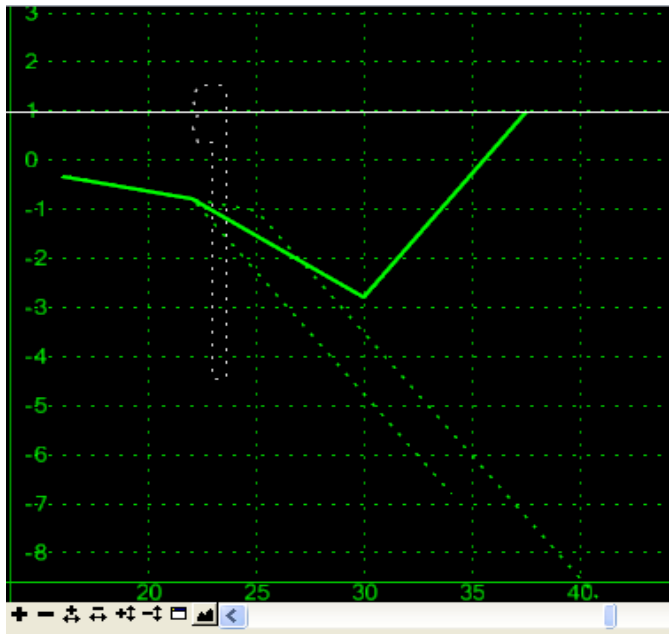
2_22 PROCESSING END CONDITION PRIORITIES

Question:

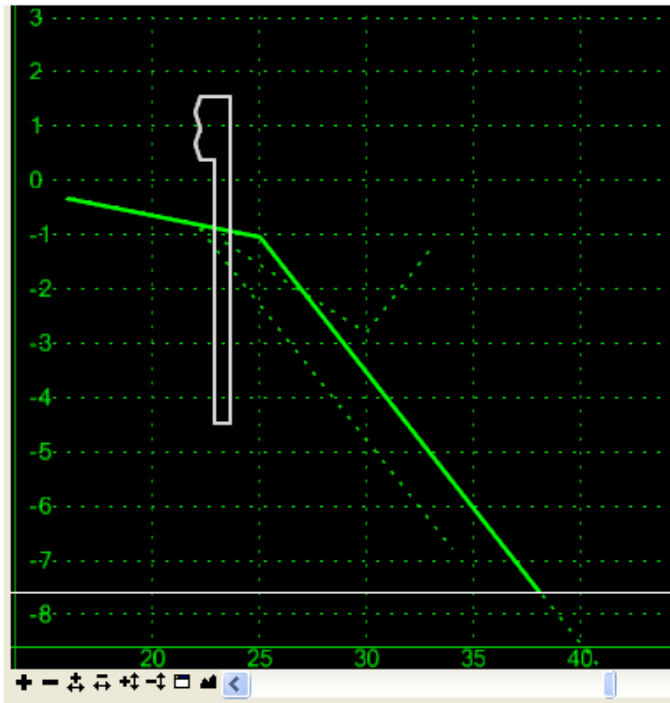
Why are there guardrail warrants in some sections where the fill height is less than 5'?

Answer:

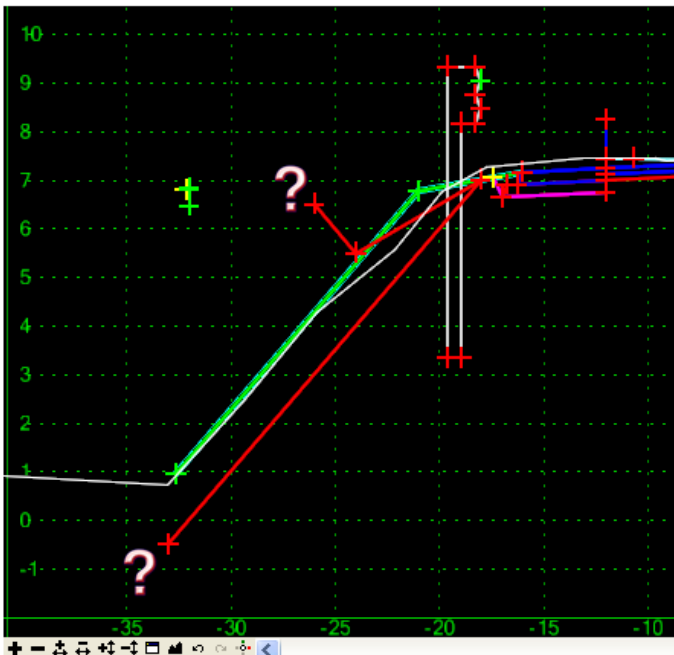
Mostly this is due to the existing terrain and each end condition branch has failed, except for the guardrail warrant. Depending on the side slope standard used, the normal cut and fill EC branch are tested first in priority assigned.



Guardrail warrant is processed last, either if the fill height is greater than 7' (with a slope of 2:1) OR if both cut and fill end condition branches have failed to solve for the existing ground.



Applying the same principle to a real world terrain where the existing ground may not always be flat may reproduce an unexpected result.



In the above scenario, both the cut and fill end condition branches (indicated in red) have failed to solve for natural ground. The next logical end condition branch to test is the guardrail warrant (green). It is then successful and displayed even though the fill height does not warrant it (less than 7').

There are two ways to fix this issue, and both ways may have to be set as part of our standards.

1. One solution is to modify the ditch foreslope and place a point of interception with the existing ground. However, this will bypass the 1' minimum ditch rule in place.
2. Another option is to add another end condition following the ditch foreslope. Process this end condition branch after the normal cut and fill EC branches have failed to solve, and before the guardrail warrant EC branch gets tested.